

IRGM gene

immunity related GTPase M

Normal Function

The *IRGM* gene provides instructions for making a protein that plays an important role in the immune system. This protein is involved in a process called autophagy, which cells use to surround and destroy foreign invaders such as bacteria and viruses. Specifically, the IRGM protein helps trigger autophagy in cells infected with certain kinds of bacteria, including the type of bacteria that causes tuberculosis. In addition to protecting cells from infection, autophagy is used to recycle worn-out cell parts and break down certain proteins when they are no longer needed. This process also plays an important role in controlled cell death (apoptosis).

Health Conditions Related to Genetic Changes

Crohn disease

Several variations in or near the *IRGM* gene have been associated with an increased risk of developing Crohn disease. This increased risk has been found primarily in people of northern European ancestry. *IRGM* variations change single DNA building blocks (nucleotides) in regions of DNA that may regulate when and how the IRGM protein is produced. Researchers suspect that changes involving the IRGM protein may disrupt the autophagy process, preventing the immune system from destroying harmful bacteria effectively. An abnormal immune response to bacteria in the intestinal walls may lead to chronic inflammation and the digestive problems characteristic of Crohn disease.

Other Names for This Gene

- A1A4Y4_HUMAN
- IFI1
- immunity-related GTPase family, M
- immunity-related GTPase family, M1
- immunity-related GTPase M
- IRGM1
- LRG-47
- LRG-47-like protein

- LRG47
- MGC149263
- MGC149264

Additional Information & Resources

Tests Listed in the Genetic Testing Registry

- Tests of IRGM ([https://www.ncbi.nlm.nih.gov/gtr/all/tests/?term=345611\[geneid\]](https://www.ncbi.nlm.nih.gov/gtr/all/tests/?term=345611[geneid]))

Scientific Articles on PubMed

- PubMed (<https://pubmed.ncbi.nlm.nih.gov/?term=%28IRGM%5BTIAB%5D%29+OR+%28%28IRGM1%5BTIAB%5D%29+OR+%28LRG-47%5BTIAB%5D%29+OR+%28LRG47%5BTIAB%5D%29%29+AND+english%5Bla%5D+AND+human%5Bmh%5D+AND+%22last+1800+days%22%5Bdp%5D%29>)

Catalog of Genes and Diseases from OMIM

- IMMUNITY-RELATED GTPase FAMILY, M (<https://omim.org/entry/608212>)

Gene and Variant Databases

- NCBI Gene (<https://www.ncbi.nlm.nih.gov/gene/345611>)
- ClinVar ([https://www.ncbi.nlm.nih.gov/clinvar?term=IRGM\[gene\]](https://www.ncbi.nlm.nih.gov/clinvar?term=IRGM[gene]))

References

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Genomic Location

The *IRGM* gene is found on chromosome 5 (<https://medlineplus.gov/genetics/chromosome/5/>).

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